REMARKS/ARGUMENTS

Claims 1-10 and 12-15 are pending in this Application.

The Examiner has indicated that the outstanding Office Action is a Final Office Action in paragraph no. 6 on page 6 of the outstanding Office Action. The Examiner is reminded that "[b]efore [a] final rejection is in order[,] a **clear issue** should be developed between the examiner and applicant." MPEP § 706.07 (emphasis added).

It is the Applicants' understanding that the Examiner is required to quote the relevant portions of the statute to clearly reject a claim. The Examiner is pointed to MPEP § 706.02(m) and Examiner's Note to Form Paragraph 7.20 where it states the quotation of 35 U.S.C. §103(a) "is only **required** in first actions on the merits employing 35 U.S.C. 103(a) and **final rejections**" (emphasis added). Because the Examiner has failed to quote 35 U.S.C. §103(a) in the rejection of claims 1-10 and 12-15, the Examiner has failed to establish a clear issue.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the Finality of the outstanding Office Action.

Claims 1-10 and 12-15 have been provisionally rejected under the judicially created doctrine of obviousness type double patenting as being unpatentable over claims 1-10 of co-pending U.S. Application No. 09/659,134. U.S. Patent No. 6,605,831 has issued from U.S. Application No. 09/659,134.

In the accompanying Terminal Disclaimer, Applicants have disclaimed the terminal portion of the statutory term of any patent granted on the instant application, which would extend beyond the expiration date of the full statutory term defined in 35 U.S.C. §§ 154 to 156 and 173, as shortened by any terminal disclaimer filed prior to the grant of commonly owned U.S. Patent No. 6,605,831 (U.S. Application No. 09/659,134).

Accordingly, Applicants request reconsideration and withdrawal of the provisional rejection of claims 1-10 and 12-15 under the judicially created doctrine of double patenting as being unpatentable over claims 1-10 of co-pending U.S. Application No. 09/659,134.

Claims 1-10 and 12-15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sawada et al. in view of Enoki et al. Applicants respectfully traverse the rejection of claims 1-10 and 12-15.

Claim 1 recites:

> "A field-effect semiconductor device comprising:
> a channel layer;
> a contact layer;
> a semiconductor structure having an electron-affinity different from those of the channel layer and the contact layer and formed between the channel layer and the contact layer, the semiconductor structure having a first junction face between the semiconductor structure and the channel layer and having a second junction face between the semiconductor structure and the contact layer;
> an ohmic electrode formed on the contact layer; and
> a Schottky electrode formed on the semiconductor structure;
> wherein both of the first junction face and the second junction face are iso-type heterojunctions; and
> the semiconductor structure is composed of a single material and includes at least two semiconductor layers." (Emphasis added)

Claim 15 recites:

> "A field-effect semiconductor device comprising:
> a channel layer;
> a contact layer;
> a semiconductor structure having an electron-affinity different from those of the channel layer and the contact layer, the semiconductor structure having at least two layers;
> an ohmic electrode formed on the contact layer; and
> a Schottky electrode formed on the semiconductor structure;
> wherein
> the semiconductor structure is formed between the channel layer and the contact layer, and where a junction between said layers of the semiconductor device is a heterojunction, the junction is an iso-type heterojunction." (Emphasis added)

Applicants agree with the Examiner that Sawada et al. does not anticipate the claims. The Examiner has relied upon Enoki et al. to allegedly cure various deficiencies in Sawada et al. The Examiner has alleged in paragraph c. on page 3 of the

outstanding Office Action that "[i]t would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the Sawada [et al.] n-AlGaAs barrier layer by providing an additional undoped layer between the top and bottom (or, restated, by temporarily stopping and restarting the dopant supply during the growth of the barrier layer) for the purpose of enhancing the Schottky barrier of the gate as taught by Enoki [et al]."

However, as acknowledged by the Examiner, Enoki et al. clearly and specifically teaches in the first column on page 502 that "[t]he undoped InAlAs layer between two **highly doped InAlAs** layers is to enhance the Schottky barrier of the gate metal" (emphasis added). Enoki et al. fails to teach or suggest anything at all about the effect of an undoped layer (either an undoped InAlAs layer or an undoped AlGaAs layer) between top and bottom n-AlGaAs layers, or any type of layers other than the disclosed **highly doped InAlAs** layers, and certainly fails to teach or suggest that such an undoped layer would enhance the Schottky barrier of the gate on Sawada et al., as alleged by the Examiner. First, Sawada et al. does not include **any** InAlAs layer. Second, Sawada et al. fails to teach or suggest that any of the layers are highly doped and certainly fails to teach or suggest that the n-AlGaAs semiconductor layer is highly doped.

Thus, contrary to the Examiner's allegations, one of ordinary skill in the art would not have been motivated to have modified the semiconductor layer of Sawada et al. to include an undoped layer in view of the teachings of Enoki et al. because the device of Sawada et al. does not include **any** highly doped InAlAs layers. Furthermore, one of ordinary skill in the art would not have been motivated for any reason to modify the semiconductor layer of Sawada et al. as suggested by the Examiner. Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination. In re Geiger, 815 F.2d 686, 2 USPQ 1276, 1278 (Fed. Cir. 1987).

Accordingly, Applicants respectfully request reconsideration and withdrawal of

the rejection of claims 1 and 15 under 35 U.S.C. § 103(a) as being unpatentable over Sawada et al. in view of Enoki et al.

Accordingly, Applicants respectfully submit that Sawada et al. and Enoki et al., applied alone or in combination, fail to teach or suggest the unique combination and arrangement of elements recited in claims 1 and 15 of the present application. Claims 2-10 and 12-14 depend upon claim 1 and are therefore allowable for at least the reasons that claim 1 is allowable.

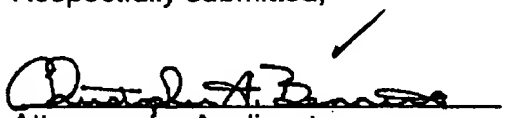
In view of the foregoing amendments and remarks, Applicants respectfully submit that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

To the extent necessary, Applicants petition the Commissioner for a ONE-month extension of time, extending to October 11, 2003, the period for response to the Office Action dated June 11, 2003.

The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

Date: October 14, 2003



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